

ABSTRACT

A metamerism-reducing color transformation in which a color value in a perceptual color space is mapped to a corresponding color value in a device dependent color space. Multiple different inverse transforms are applied to the color value in the perceptual color space, one each for respective ones of multiple different viewing conditions such as different viewing illuminants or different surround, thereby resulting in plural different target color values in a viewing condition dependent space. The plural different target color values in the viewing condition dependent space are subjected to regression analysis based on a spectral model of reflectance of device colors so as to calculate to a single color coordinate in device dependent coordinates that best fits the plural different target color values in the viewing condition dependent space. The regression analysis may be a weighted regression analysis. Because the color value in the destination device dependent color space is obtained through best-fit regression analysis of plural different target color values corresponding to multiple different viewing conditions, metameric shifts in the color's appearance due to changes in viewing condition are significantly reduced as compared to transformations which obtain values accurate only for a single viewing condition.